

## **BCP 1.0A**

Standard

Implementation

**ABNT NBR 5992**

Calculation of Ethanol -  
Requirements and Test  
methods.

Version 02 (SP09)

## Notes:

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## Introduction

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This solution is an implementation of standard ABNT NBR 5992 by QuantityWare GmbH based on the product Bulk Calculations Petroleum Version 1.0A (BCP 10A).

The solution runs only in an SAP ABAP environment in which SAP Oil & Gas has been implemented.

This solution can be accessed by the SAP Quantity Conversion Interface (QCI) or the QuantityWare MQCI (Model based QCI) and is controlled by the provided conversion groups.

## 1. Installation

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The technical implementation is provided as a part of a CSP package.

Please follow the standard SAP instructions for importing service packages into your system via transaction SPAM.

SAP Oil and Gas must be installed


QuantityWare BCP 10A must be installed.

Customizing settings, which are needed in every client in which this standard will be used, are included in the delivery package.

On releases based upon SAP 4.72 and below, the related customizing transport must be imported into all necessary clients, or distributed to them from client 000.

On releases based upon SAP ERP 2005 (ECC 6.00) or newer, BC Set /QTYW/BCP\_10A must be activated in the relevant clients.

Please refer to the QuantityWare BCP 10A Installation Guide for more information.

 **WARNING:** *If you import the customizing template into a pre-existing client, any pre-existing entries listed within the template (transport or BC-Set) will be **OVERWRITTEN!***

## 2. Components of the Installation

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The main part of the installation is:

Function group:            / QTYW/NBR5992\_EXT  
                              (The main procedures and constants)

The function can be called via the Export/Import interface or from the application via the QCI using the provided conversion groups – QuantityWare name range QI\*\* (see document “Conversion Groups by QuantityWare” for details). Within the Petroleum Measurement Cockpit, you can display all configuration data for this implementation.

Test programs:            / QTYW/ETHANOL\_NBR5992\_TEST  
                              / QTYW/MQCI\_NBR5992\_TEST


## 3. Formula and Requirements

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### 3.1. Implementation Solution

This solution calculates volumes at the base temperature of 20 degree Celsius, weights and masses, based on the input values and constants provided by the table values of ABNT NBR 5992.

The data points of this table have been uploaded and defined as constants in this implementation.

 *Before using this implementation in any productive system, it is strongly recommended to print out these constants using the test report provided and compare them against the printed table of standard NBR 5992. Use the Petroleum Measurement Cockpit to access the test report and print functions (Transaction /QTYW/COCKPIT)*

### 3.2. Implementation Integration – SAP QCI and QuantityWare MQCI

Standard NBR 5992 defines Volume Correction Factors for a temperature range of 10 degree Celsius to 40 degree Celsius. This range is also the standard range of this implementation. A range extension down to 0 degree Celsius on customer specific definitions is also available on customer request.

The input density (g/ml) will be rounded with an increment of 0.0005 and the temperature (Celsius) with an increment of 0.5 using the rounding procedure of ASTM D 1250-04.

The procedure then picks up the base density and grade of alcohol from the NBR 5992 table. The procedure then utilizes the determined base density and grade from the first step and the passed target temperature to determine the VCF.

First it tries to find the full key as base density, temperature and grade.

If that key is not available, the procedure checks all combinations of temperature and base density for the closest grade.

If no combination of temperature and base density fits, the procedure takes the values with the temperature and the closest base density.

The QuantityWare MQCI implementation is configured to calculate mass and weight values in parallel, using ASTM Table 56 to convert density in vacuum to density in air.

## 4. Installation Test

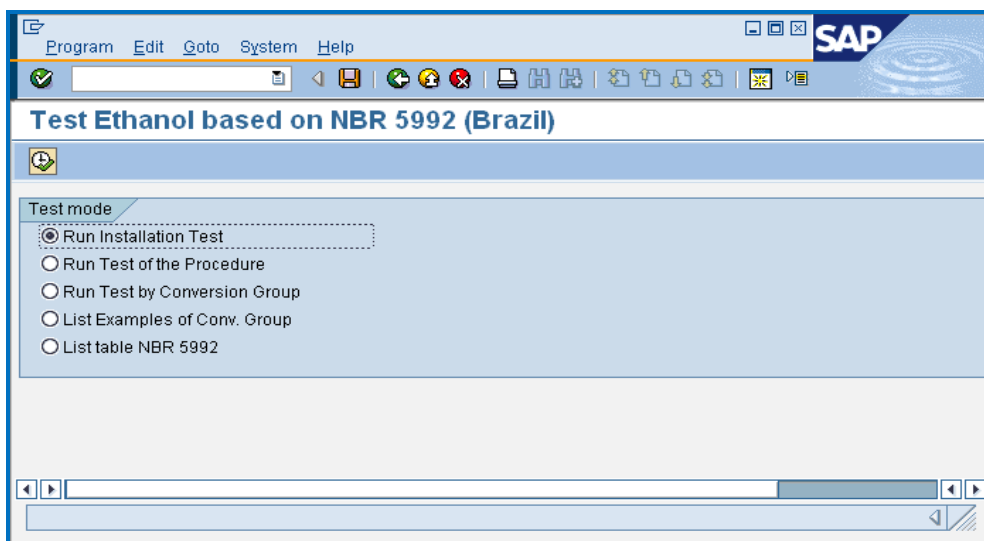
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Along with the package QuantityWare provides two test programs that can be used to test the installation:

```
/QTYW/ETHANOL_NBR5992_TEST
/QTYW/MQCI_NBR5992_TEST
```

### 4.1. Report /QTYW/ETHANOL\_NBR5992\_TEST selection options

Four standard selection options and one print option are available.



- ➔ Run Installation Test: executes all standard test examples and the conversion group based quantity conversion examples. Results are compared with hard coded expected results.
- ➔ Run Test of the Procedures: executes all standard test examples.
- ➔ Run Test by Conversion Group: executes the conversion group based quantity conversion examples.
- ➔ List examples of Conv. Group: lists all examples with input and output data.
- ➔ List table NBR 5992: prints a list of all correction factors.

▲ *If any errors occur, the result list will indicate this with an error message (red background color).*

#### 4.2. Report /QTYW/MQCI\_NBR5992\_TEST selection options

This report offers two selection options.

- ➔ Run Test by Conversion Group: executes the conversion group based quantity conversion examples.
- ➔ List examples of Conv. Group: lists all examples with input and output data.

▲ *If any errors occur, the result list will indicate this with an error message (red background color).*

### 5. Integration into SAP - QCI desktop calculator

This implementation is fully integrated into the SAP QCI and thus into all logistics processes such as the SAP Trader's & Schedulers Workbench (TSW). The desktop calculator (transaction O3QCITEST) can be used to calculate product quantity values for volumes, masses and weights.

